Supplemental Comments of

The Environmental Law & Policy Center

for the Illinois Commerce Commission

Initiative on Plug-In Electric Vehicles

August 15, 2011

The Environmental Law & Policy Center appreciates the opportunity to offer supplemental comments for the Illinois Commerce Commission's Initiative on Plug-In Electric Vehicles (PEVs). We commend the Commission for taking a proactive approach to understanding issues associated with the electrification of the transportation sector in Illinois.

The first generation of PEVs will appear in Illinois in the next 6-12 months, and most of the major automakers will have PEV models available for purchase within the next five years. This represents a major transition for the transportation and electric system and we believe it will yield significant societal and economic benefits if managed effectively. We encourage the Commission to look to the following principles as guideposts while assessing the complicated legal and technical questions raised by this issue. The Commissions' decisions should have the effect of:

(1) Facilitating market penetration by reducing barriers to owning and operating PEVs;

(2) Maximizing the environmental and economic benefits of PEV integration; and

(3) Fostering competition and robust market development opportunities for Illinois businesses.

With these objectives in mind, we offer the following comments on the specific questions raised in the Commission's *Request for Supplemental Comments*.

Issue (A) – The appropriate regulatory paradigm (if any) for private and public charging stations.

In their *Initial Assessments of the Impact of the Introduction of Plug-In Electric Vehicles on the Distribution System,* both ComEd and Ameren arrive at the conclusion that under the Public Utilities Act ("PUA"), the deployment of private and public PEV charging infrastructure is not a service obligation of a public utility, is not a regulated service that can only be offered by a public utility or an alternative retail electric supplier ("ARES"), but fits most comfortably within the definition of a competitive service, i.e. a service "related to, but not necessary for, the provision of electric power and energy or delivery

service."[1] ComEd at 26 and 32; Ameren at 4. As both utilities point out, a private PEV charging station is like any another consumer appliance installed on the customer's side of the meter that draws electricity from the grid. The Commission has historically considered all "behind the meter" equipment and energy utilization the responsibility of the customer alone, and thus outside of the Commission's jurisdiction. We do not see any reason to differentiate a PEV and associated charging equipment from any other consumer appliance in this respect.

Furthermore, we believe that treating the deployment of *public* PEV charging infrastructure as a competitive, rather than a regulated service, is the most consistent and efficient approach to fostering development to serve new demand. Charging station owners and operators will frequently be municipal governments, shopping malls, parking garages, i.e. entities that provide products and services distinctly different than an ARES, and for which vehicle charging is provided only as an additional customer service. Battery charging is one of the many services offered by auto repair shops, yet we do not define Firestone as an ARES. Furthermore, as ComEd points out, even businesses that develop with the primary purpose of providing PEV owners access to vehicle charging will also offer "a cluster of related services that are distinct from simply selling electric power and energy" including the use of a parking space, the use of the charging station itself, customer support and notification functions, a variety of rate and payment options, among other services. ComEd at 29. We agree with ComEd that these bundled services distinguish a vehicle charging business from an ARES, which the PUA defines as an entity that "offers electric power or energy for sale… to… retail customers, … or that engages in the delivery or furnishing of electric power or energy to such retail customers[.]"[2]

As long as these charging service providers are customers of regulated utilities or ARES, the electricity they provide is subject to ICC jurisdiction under the PUA, and additional regulation is not

[1] 220 ILCS 5/16-102
[2] 220 ILCS 5/16-102

necessary. We suggest that the Commission move to explicitly clarify their status as competitive service providers to avoid lingering uncertainty and associated cost and delay. However, if charging service providers are instead procuring electricity on the wholesale market, NRDC's comments correct note that a blanket exemption from ICC jurisdiction would exempt them from meeting renewable energy mandates in the Illinois Power Act and the Public Utilities Act.[3] To avoid this unintended consequence, we support NRDC's recommendation that the Commission should "clearly articulate that any entity procuring electricity at wholesale for PEV charging will be subject to the same regulatory framework as those procuring electricity for any other purpose." NRDC at 6.

Issue (B) – In order to facilitate the charging of electric vehicles that provides the maximum societal environmental and economic benefits, what modifications (if any) should be made to existing utility rates? In addition, what metering options and charges should be considered while taking into account the existence of competitive retail suppliers?

Almost all of the parties that submitted initial comments in response to the Commission's December 22, 2010 request underscored the importance of creating price signals that incentivize EV owners to charge during off-peak hours. There are environmental advantages to off-peak charging, particularly in ComEd's service territory where much of the nighttime load is served by must-run nuclear and wind plants. With low emission marginal power generation during off-peak hours, a strong PEV adoption rate and off-peak charging can produce significant emission reductions. There are economic advantages as well. Off-peak prices have historically been quite low (occasionally negative), reflecting the availability of excess capacity that could be used for charging vehicles. Using rate design to steer consumers to charge primarily during off-peak hours will help stabilize the electric grid by smoothing out load curves and increasing the value of off-peak electricity as PEV penetration increases.

[3] 20 ILCS 3855/1-75 and 220 ILCS 5/16-115D

ELPC believes that it is important to make it easy for consumers to choose a time-variable rate option that will encourage off-peak charging. ComEd's Assessment demonstrated that charging vehicles on Rate BESH, the existing real time price (RTP) tariff, will be economically advantageous for PEV owners provided they avoid peak-period charging. ComEd at 45-49. If car buyers are educated about the RTP program at the point of sale, we believe that many PEV buyers will choose to participate. A new Time-of-Use (TOU) tariff with a fixed on-peak and off-peak rate may also be appealing for some consumers. While competitive suppliers can and should develop this type of rate offering, we agree with ComEd that nothing in the PUA limits a utility's ability to propose a new tariff. ComEd at 42. Offering PEV owners the choice between two time-variable rates (RTP and TOU) will increase overall participation.

Customers should not be required to install a separate meter to track PEV load. Installing separate metering infrastructure is expensive, and for most customers, unnecessary. We believe, however, that some PEV owners may wish to charge vehicles on a time-variable rate (either RTP or TOU) while leaving their home appliances/AC/lights, etc. on a flat rate. Therefore, we encourage the utilities to investigate the advantages and disadvantages of separately metered service and sub-metered service from the perspective of both the customer and the utility. There are pilot projects underway in California, Michigan and Indiana that will provide helpful information about consumer preferences and technological solutions for separating PEV load and offer guidance should a local pilot prove merited.

Finally, the ICC should require the utilities to explore new pricing mechanisms to encourage renewable energy integration and vehicle-to-grid (V2G) technology in charging infrastructure. For instance, offering an aggregated net metering program to charging station providers would enable businesses to pair solar arrays with charging stations at multiple locations and "virtually" off-set incremental peak loads. Offering a two-way real-time rate would encourage PEV owners to send excess

power back to the grid during peak hours when it is most needed, while also providing grid stabilization and regulatory services.

Issue (C) – What cost causation and rate design modifications will be required to handle distribution upgrades for increased penetration of higher voltage at-home charging?

And

Issue (D) – Which costs, if any, should be socialized and why (rationale, benefits, etc.)? Assuming there are costs to be socialized, what are the proper methods for such allocation?

These two questions presume that it is a foregone conclusion that PEV penetration will require costly upgrades to the distribution grid. This need not be the case. In fact, we believe that it is possible not only to avoid negative impacts to the distribution system, but also to encourage positive impacts. Effective management and implementation of the following measures can yield net positive effects on grid reliability, stability and the cost of energy services:

(1) **Time-variable rates.** Rate structures that incentivize off-peak charging will mitigate incremental peak period charging and reduce threats to distribution system components. They can also help smooth load profiles and provide for more efficient use of existing generation assets.

(2) **Load control functionality and V2G communication.** Technology that allows utilities to remotely shut-off or cycle-down battery charging will be a standard feature of PEV charging stations. Ultimately, vehicle-to-grid communication can enable utilities to rely on distributed PEV batteries for essential grid regulation services.

(3) **Utility notification.** Utilities, car companies and auto dealers should work together to ensure that the utilities are notified when a customer installs a Level 2 charging station. This

information will help utilities keep track of PEV "clusters" and proactively manage equipment upgrades, as necessary.

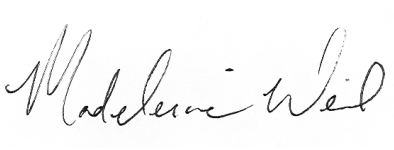
We believe that negative impacts can be avoided altogether with proactive management. That said, we agree with the Commission that it is important to conclusively establish how the principle of cost causation applies to PEV penetration. We submit that PEVs should be treated no differently than any other consumer appliance. Utilities have the responsibility for ensuring grid reliability, maintaining and upgrading distribution system components to serve a constantly shifting load profile. Customers add new appliances to utility feeder systems every day. Electric furnaces, air conditioners, clothes dryers, stoves/ovens, hot water heaters, and hot tubs have an electric demand similar to that of a Level 2 charging station and it would not be fair, consistent, or appropriate to treat PEVs any differently than any other consumer appliance for purposes of cost causation. To illustrate this point, imagine a four-home cul-de-sac on a single neighborhood transformer. House #1 has a hot tub and an electric clothes dryer. House #2 has a PEV with a Level 2 charger. The occupants of House #3 like to set the A/C at 65 degrees during hot summer days and have an on-demand electric hot water heater. House #4 has two plasma TVs with set top cable boxes and three desktop computers with high definition monitors. One hot day in July at 5pm, the neighborhood transformer blows out. In this scenario, how would cost causation be assigned?

Happily, the application of existing cost causation principles avoids the need to determine which house is the cost-causer. The utility is responsible for maintaining the distribution grid and the costs of doing so are socialized across the rate base. The introduction of PEVs need not alter this formula.

Conclusion

ELPC appreciates the Commission's leadership on this important topic and we look forward to participating in the August 23rd Policy Committee meeting.

Respectfully submitted,



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